Claims

- Pharmaceutical or diagnostic composition comprising one or more active 1. substances wherein the one or more active substance is/are selected from a group consisting of:
 - (a) active substances with a structure according to formula I-1 to I-9

tive substances with a structure according to formula I-1 to I-9

Formula I-1

Formula I-2

$$R_1$$
 R_2
 R_3
 R_4

Formula I-3

Formula I-4

 R_1
 R_2
 R_3

Formula I-4

Formula I-5

Formula I-6

Formula I-8

Formula I-7

Formula I-9

wherein X in formula I-2 and I-3 is H, OH, NH2 or a halogen atom and X1 and X₂ in formula I-4 are any heteroatom;

(b) active substances with a structure according to formula II-1 or II-2

$$R_1$$
 R_2
 R_3
Formula II-1

 R_1
 R_2
 R_3
Formula II-2

Formula II-1

(c) active substances with a structure according to formula III-1 to III-6

Formula III-3

Formula III-4

$$R_1$$
 R_2
 R_3

Formula III-2

Formula III-2

 R_1
 R_2
 R_3

Formula III-2

 R_1
 R_2
 R_3

Formula III-2

Formula III-4

Formula III-4

wherein X in formula III-1 and X_1 and X_2 in formula III-5 are H, OH, NH₂ or a halogen atom;

(d) active substances with a structure according to formula IV-1 to IV-6

Formula IV-1

Formula IV-2

$$R_1$$

Formula IV-4

Formula IV-4

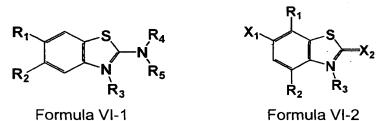
Formula IV-5

Formula IV-6

 X_1 and X_2 in formula IV-6 are selected from H, F, I, Br or CI, OH or OA, SH or SA, NH₂, NHA₁ or NA₁A₂ or A and wherein A and/or A₁ and A₂ is/are a branched, straight-chain or cyclic alkyl or heteroalkyl group with up to 7 carbon atoms;

(e) active substances with a structure according to formula V-1 to V-4

(f) active substances with a structure according to formula VI-1 or VI-2



wherein R₁ to R₉ and S₁ to S₃ are selected from

- (i) H, OH, NH₂ or a halogen atom;
- (ii) single- or multi-branched or straight-chain alkyl or heteroalkyl groups with one or two rings and up to 10 carbon atoms;
- (iii) cyclic alkyl or heteroalkyl groups with 1 or 2 rings or aryl or heteroaryl groups with up to 10 carbon atoms each.
- 2. Pharmaceutical or diagnostic composition according to claim 1, wherein the halogen atoms are selected from a group consisting of I, CI, Br or F.
- 3. Pharmaceutical or diagnostic composition according to claim 1 or 2, wherein the alkyl, heteroalkyl, aryl or heteroaryl groups comprise 1, 2, 3 or 4 heteroatoms each.
- 4. Pharmaceutical or diagnostic composition according to any of claims 1 to 3, wherein the heteroatoms are selected from a group consisting of N, O, or S.
- 5. Pharmaceutical or diagnostic composition according to any of claims 1 to 4, wherein the alkyl, heteroalkyl, aryl or heteroaryl groups comprise 1, 2, 3 or 4 substituents each.
- 6. Pharmaceutical or diagnostic composition according to claim 5, wherein the

substituents are selected from a group consisting of Cl, F, Br or I.

- 7. Pharmaceutical or diagnostic composition according to any of claims 1 to 6, wherein R_1 and R_2 , R_2 and R_3 , R_3 and R_4 , R_4 and R_5 , R_5 and R_6 , R_6 and R_7 , R_7 and R_8 and/or R_8 and R_9 are bridged via further atoms.
- 8. Pharmaceutical or diagnostic composition according to any of claims 1 to 6, wherein the active substance with a structure according to formula I-5 or I-7 is selected from:

Anthraquinone

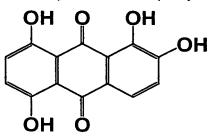
1,8-Dihydroxy-anthraquinone (Danthron)

1,8-Dihydroxy-10H-anthracene-9-one

1,8-Dihydroxy-3-methyl-10H-anthracene-9-one

(Dithranol/ Anthralin)

(Chrysarobin)



1,2,5,8-Tetrahydroxy-anthraquinone

4-[2-(1-Amino-4-hydroxy-9,10-dioxo-9,10-dihydro-anthracene-2-sulfonyl)ethyl]-N-propyl-benzensulfoneamide

2-Amino-benzoic acid-6-(1-amino-4-hydroxy-9,10-dioxo-9,10-dihydro-anthracene-2-yloxy)-hexyl-ester

9. Pharmaceutical or diagnostic composition according to any of claims 1 to 6, wherein the active substance with a structure according to formula I-1 is selected from:

(1-Methyl-1H-perimidine-2-yl)-methanol

2-(1H-Imidazole-4-yl)-1H-perimidine

1-Ethyl-1*H*-perimidine

1H,3H-Perimidine-2-thione

2-Pyridine-3-yl-1H-perimidine

1,2-Dimethyl-1*H*-perimidine

4-(1H-Perimidine-2-yl)-benzonitrile

2-p-Tolyl-1H-perimidine

3-(1H-Perimidine-2-yl)-phenylamine

2-Pyridin-4-yl-2,3-dihydro-1*H*-perimidine

10. Pharmaceutical or diagnostic composition according to any of claims 1 to 6, wherein the active substance with a structure according to formula I-2 is

 $8\hbox{-Fluoro-1,2-dimethyl-4,5-dihydro-pyrrolo} \hbox{\small [3,2,1-ij]} quino line-6-one.$

11. Pharmaceutical or diagnostic composition according to any of claims 1 to 6, wherein the active substance with a structure according to formula I-4 has the

following formula:

$$R_2$$
 R_3
 R_4
 R_5
 R_8
 R_7
 R_6

12. Pharmaceutical or diagnostic composition according to claim 11, wherein the active substance is selected from

Phenoxazine-3-one

1,9-Dimethyl-phenoxazine-3-one

7-Amino-1,9-dimethyl-phenoxazine-3-one

7-Hydroxy-1,9-Dimethyl-phenoxazine-3-one

7-Amino-8-(2,4-dihydroxy-6-methyl-phenyl)-1,9-dimethyl-phenoxazine-3-one (alpha-amino-orcein)

8-(2,4-dihydroxy-6-methyl-phenyl)-7-hydroxy-1,9-dimethyl-phenoxazine-3-one (alpha-hydroxy-orcein)

7-Amino-2,8-bis-(2,4-dihydroxy-6-methyl-phenyl)-1,9-dimethyl-phenoxazine-3-one (beta-amino-orcein)

7-Amino-2,8-bis-(2,4-dihydroxy-6-methyl-phenyl)-1,9-dimethyl-phenoxazine-3-one (gamma-amino-orcein)

2,8-bis-(2,4-dihydroxy-6-methyl-phenyl)-7-hydroxy-1,9-dimethyl-phenoxazine-3-one (beta-hydroxy-orcein)

2,8-bis-(2,4-dihydroxy-6-methyl-phenyl)-7-hydroxy-1,9-dimethyl-phenoxazine-3-one (gamma-hydroxy-orcein)

$$\begin{array}{c} \mathsf{HO} \\ \\ \mathsf{OH} \\ \\ \mathsf{H}_2 \mathsf{N} \end{array} \\ \begin{array}{c} \mathsf{OH} \\ \\ \mathsf{NH} \end{array} \\ \begin{array}{c} \mathsf{OH} \\ \\ \mathsf{NH} \end{array}$$

beta-amino-orceimine

gamma-amino-orceimine

13. Pharmaceutical or diagnostic composition according to any of claims 1 to 7, wherein the active substance with a structure according to formula II-2 is

selected from:

 $\label{eq:N-(8-Cyano-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinolin-2-yl)-N-(2-dimethylamino-ethyl)-formamide} N-(8-Cyano-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinolin-2-yl)-N-(2-dimethylamino-ethyl)-formamide$

N-(8-Cyano-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinolin-2-yl)-N-(2-dimethylamino-ethyl)-acetamide

7-Oxo-2-(2-piperidin-1-yl-ethylamino)-6,7-dihydro-thiazolo[4,5-f]quinoline-8-carbonitrile

 ${\it N-} (8-{\rm Cyano-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinolin-2-yl)-N-} (3-{\rm dimethylamino-propyl})-{\it formamide}$

N- (8-Cyano-7-oxo-6,7-dihydro-thiazolo[4,5-f] quinolin-2-yl)-acetamide

2-(3-Dimethylamino-propylamino)-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinoline-8-carbonitrile

2-[(2-Diethylamino-ethyl)-ethyl-amino]-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinoline-8-carbonitrile

2-Amino-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinoline-8-carbonitrile

2-[4-(3-Hydroxy-propyl)-piperazine-1-yl]-7-oxo-6,7-dihydro-thiazolo[4,5-f]quinoline-8-carbonitrile

 $\hbox{$2$-[Benzyl-(2-dimethylamino-ethyl)-amino]-7-oxo-6,7-dihydro-thiazolo[4,5-f] quinoline-8-carbonitrile}$

- 14. Diagnostic composition according to any of claim 1 to 13, wherein the active substance or at least one of the active substances is labeled, preferably radioactive-labeled.
- 15. Use of one or more active substances as described in any of claims 1 to 14 for preparing a pharmaceutical or diagnostic composition for the treatment or diagnosis of neurodegenerative disorders or amyloid diseases.

- 16. Pharmaceutical or diagnostic composition according to any of claims 1 to 14 or use according to claim 15, wherein the pharmaceutical or diagnostic composition furthermore comprises one or more pharmaceutically acceptable carriers, diluents or excipients.
- 17. Method for the treatment or diagnosis of neurodegenerative disorders or amyloid diseases comprising administering a pharmaceutical or a diagnostic composition according to any of claims 1 to 14 to a subject.
- 18. Method according to claim 17, wherein the subject is a human being.
- 19. Use or method according to any of claims 15 to 18, wherein the neurodegenerative disorder is selected from a group consisting of Alzheimer's disease, Parkinson's syndrome and polyglutamine diseases.
- 20. Use or method according to claim 19, wherein the Parkinson's syndrome encompasses idiopathic Parkinson's disease as well as atypical Parkinson's syndromes associated with protein aggregation; and the polyglutamine diseases encompass Huntington's chorea, spinocerebellar ataxias of types 1, 2, 3, 6, 7 and 17, dentatorubral pallidoluysian atrophy as well as spinobulbar muscular atrophy (Kennedy syndrome).
- Use or method according to any of claims 15 to 18, wherein the amyloid disease is selected from: Hereditary and non-hereditary prion diseases (kuru, fatal familial insomnia, Gerstmann-Straussler-Scheinker syndrome, Creutzfeld-Jacob disease, new variant of Creutzfeld-Jacob disease), dementia with Lewy bodies, primary systemic amyloidosis, secondary systemic amyloidosis with deposits of serum amyloid A, senile systemic amyloidosis, familial amyloid polyneuropathy types I and III, familial nonneuropathic amyloidosis, familial British dementia, hereditary cerebral amyloid angiopathy, hemodialysis-associated amyloidosis, familial amyloidosis-Finnish type, diabetes mellitus type II, hereditary renal amyloidosis, injection amyloidosis with deposits of insulin, medullary carcinoma of the thyroid with deposits of calcitonin, atrial amyloidosis with deposits of ANF, inclusion body myositis.